using the selected model to make a prediction of underwriting value for the non-underwritten assets such that the predicted underwriting value for the non-underwritten assets with partial or incomplete data representations is based on at least one of fully underwritten assets, other non-underwritten assets with complete data representations, and available data from non-underwritten assets with partial or incomplete data representations having similar identifiable characteristics.

Remarks

The Office Action mailed February 25, 2003 has been carefully reviewed and the foregoing amendment has been made in consequence thereof. Submitted herewith is a Submission of Marked Up Claims.

Claims 1-30 are pending in this application. Claims 1-30 have been rejected.

The rejection of Claims 1-10 and 21-30 under 35 U.S.C. § 101 as being directed to non-statutory subject matter is respectfully traversed.

Applicants respectfully submit that the claims of the present patent application are directed to practical applications in the technological arts. "Any sequence of operational steps can constitute a process within the meaning of the Patent Act so long as it is part of the technological arts." *In re Musgrave*, 431 F.2d 882 (C.C.P.A. 1970). For example, independent Claim 1 is a method directed to "predicting value of non-underwritten assets for which data representations are partial or incomplete". Applicants submit that predicting value of non-underwritten assets for which data representations are partial or incomplete is a useful process that is considered to be within "the technological arts".

One specific example of such a method implementation is a computer with a processor programmed to at least sample assets according to risk, form market value clusters, build regression models for underwritten assets, select the best models for the underwritten assets, count a number of times the models are selected, and use the selected model to make a prediction

of underwriting value for the non-underwritten assets. While the claims are not limited to the specific example related to a computer with a programmed processor, the claims need not be so restricted to satisfy the requirement of Section 101.

Applicants further traverse the assertion included in the Office Action that Claims 1-10 and 21-30 are directed to "nothing more than abstract ideas which are equivalent to human making mental computations that are not tied to any technological art and not considered a useful art as contemplated by the Constitution." The Examination Guidelines for Computer-Related Inventions provides in relevant part as follows:

> In order to determine whether the claim is limited to a practical application of an abstract idea, Office personnel must analyze the claim as a whole, in light of the specification, to understand what subject matter is being manipulated and how it is being manipulated. During this procedure, Office personnel must evaluate any statements of intended use or field of use, any data gathering step and any post-manipulation activity....Only when the claim is devoid of any limitation to a practical application in the technological arts should it be rejected under § 101. Further, when such a rejection is made, Office personnel must expressly state how the language of the claims has been interpreted to support the rejection.

Applicants respectfully submit that Claims 1 and 21 are limited to a practical application in the technological arts. Furthermore, Applicants respectfully submit that the Office Action does not expressly state how the language of Claims 1 and 21 support the Section 101 rejection.

More specifically, Claim 1 recites a method for predicting value of non-underwritten assets for which data representations are partial or incomplete that includes "sampling assets according to risk...underwriting assets and recording valuations...forming market value clusters...utilizing a computer processor to build regression models for underwritten assets...selecting the best models for the underwritten assets...counting a number of times the models are selected...and using the selected model to make a prediction of underwriting value for the non-underwritten assets such that the predicted underwriting value for the non-underwritten assets with partial or incomplete data representations is based on at least one of fully underwritten assets, other non-underwritten assets with complete data representations, and

available data from non-underwritten assets with partial or incomplete data representations having similar identifiable characteristics."

Applicants respectfully submit that Claim 1 is directed to a useful process that is considered to be within "the technological arts". More specifically, Claim 1 describes a method for predicting value of non-underwritten assets for which data representations are partial or incomplete that includes the step of utilizing a computer processor to build regression models for underwritten assets. Accordingly, Claim 1 is directed to statutory subject matter, and is not directed, as suggested by the Office Action, to "nothing more than abstract ideas".

Dependent Claims 2-10 depend from independent Claim 1, and these dependent Claims are submitted to satisfy the requirements of Section 101 for the same reasons set forth above with respect to independent Claim 1.

Claim 21 recites "a computer configured to predict value of non-underwritten assets for which data representations are partial or incomplete, said computer including a database of asset portfolios, said computer programmed to...sample assets according to risk...underwrite assets and record valuations...form market value clusters...build regression models for underwritten assets...select the best models for the underwritten assets...count a number of times the models are selected...and use the selected model to make a prediction of underwriting value for the non-underwritten assets...."

The Office Action suggests that Claim 21 is directed to an abstract idea because the recitation of "a computer" is found only within the preamble of the claim. However, the Federal Circuit has held that "preamble language will limit the claim if it recites not merely a context in which the invention may be used, but the essence of the invention without which performance of the recited steps is nothing but an academic exercise." (*Griffin v. Bertina*, 62 USPQ2d 1431, 1432 (Fed. Cir. 2002), and *Boehringer Ingelheim Vetmedica, Inc. v. Schering-Plough Corp.*, 2003 WL 367880 (Fed. Cir. 2003)). Applicants respectfully submit that the recitation of "a computer" as recited in Claim 21 limits the claim because it describes the essence of the invention (i.e., a computer configured to predict value of non-underwritten assets for which data

representations are partial or incomplete). Applicants therefore submit that Claim 21 is directed to a useful apparatus, a computer, that is within "the technological arts". Accordingly, Claim 21 is directed to statutory subject matter, and is not directed to an abstract idea.

Dependent Claims 22-30 depend from independent Claim 21, and these dependent Claims are submitted to satisfy the requirements of Section 101 for the same reasons set forth above with respect to independent Claim 21.

For at least the reasons set forth above, Applicant respectfully requests that the Section 101 rejection of Claims 1-10 and 21-30 be withdrawn.

The rejection of Claims 11-20 under 35 U.S.C. § 112, second paragraph is respectfully traversed.

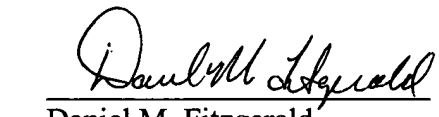
Applicants respectfully submit that Claim 11 is directed to a system for predicting value of non-underwritten assets for which data representations are partial or incomplete wherein the system includes a computer configured as a server and further configured with a database of asset portfolios, and at least one client system connected to the server through a network. Accordingly, the "system" described in Claim 11 is an apparatus.

Applicants further submit that one skilled in the art would understand that the system described in Claim 11 includes a computer configured as a server and further configured with a database of asset portfolios, and at least one client system connected to the server through a network after reading the specification in light of the figures. Specifically, all of the aforementioned elements are shown in detail in Figure 14 and are described in the specification at page 36, lines 7-24, including system 300, server 302, computers 304, database server 306, and database 76. Applicants respectfully submit that one skilled in the art would understand the system as recited in Claim 11. As such, Applicants respectfully submit that the claims are fully enabled and supported by the specification, and that the scope of the claims are ascertainable with a reasonable degree of certainty. Accordingly, Applicants respectfully submit that Claims 11-20 satisfy Section 112.

Accordingly, for at least the reasons set forth above, Applicants respectfully request that the Section 112 rejection of Claims 11-20 be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in the application are believed to be in condition for allowance. Favorable action is respectfully solicited.

Respectfully Submitted,



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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Keyes et al.

Art Unit: 3624

Serial No.: 09/745,821

Examiner: Daniel S. Felten

Filed: December 21, 2000

For: VALUATION PREDICTION MODELS IN SITUATIONS WITH MISSING INPUTS

SUBMISSION OF MARKED UP CLAIMS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Submitted herewith are marked up Claims in accordance with 37 C.F.R. 1.121(c)(1)(ii).

IN THE CLAIMS

1. (twice amended) A method for predicting value of non-underwritten assets for which data representations are partial or incomplete, said method comprising the steps of:

sampling assets according to risk;

underwriting assets and recording valuations;

forming market value clusters;

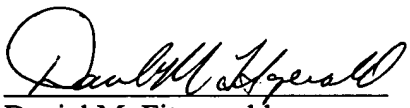
utilizing a computer processor to build [building] regression models for underwritten assets;

selecting the best models for the underwritten assets;

counting a number of times the models are selected; and

using the selected model to make a prediction of underwriting value for the non-underwritten assets such that the predicted underwriting value for the non-underwritten assets with partial or incomplete data representations is based on at least one of fully underwritten assets, other non-underwritten assets with complete data representations, and available data from non-underwritten assets with partial or incomplete data representations having similar identifiable characteristics.

Respectfully Submitted,



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